P-179 - IMPACT OF AN ANTHOCYANIN RICH BLUEBERRY EXTRACT UPON LACTOBACILLUS AND BIFIDOBACTERIUM GROWTH AND SUBSEQUENT IMPACT UPON CACO-2 VIABILITY

Mariana Veiga[1]; Eduardo Costa[1]; Patrícia Batista[1]; Sara Silva[1]; Manuela Pintado[1]

1 - Universidade Católica Portuguesa, CBQF - Centro de Biotecnologia e Química Fina – Laboratório Associado, Escola Superior de Biotecnologia

Background

Blueberries have been associated with several potentially beneficial properties, including antioxidant and anti-inflammatory activity, and most recently have been associated with the modulation of the intestinal microbiota. Previous works have shown that an anthocyanin rich blueberry extract, while capable of inhibiting potential pathogens had no significant impact upon the growth of probiotics, even though it did stimulate organic acid production. As such, this work aimed to assess whether this extract, alone or when fermented by different probiotic bacteria, had any negative impact upon CaCo-2 cells' viability.

Method

The blueberry extract was fermented by 12 and 24 h by *Bifidobacterium lactis* Bo, *Bifidobcaterium lactis* BB12, *Lactobacillus plantarum*, *Lactobacillus rhamnosus* and a mix (1:1:1:1) of all the bacteria. The extract and the fermented supernatants' biocompatibility was assessed using Caco-2 intestinal cells and the XTT colorimetric method. The total phenolic and anthocyanin content was determined through HPLC-DAD, while organic acid production and sugar consumption (during the fermentation) were evaluated using an HPLC-RI system.

Results & Conclusions

Results demonstrated that the extract did not exert any inhibition of the cellular metabolism appearing to, in fact, stimulate it. Additionally, when comparing the results observed for the fermented extract with those of the corresponding negative controls, it can be seen that the presence of extract led to lower inhibition percentages, (which ranged from -20 to 40%). The microorganism which showcased the most interesting activity was *Bifidobacterium animalis* Bo. This bacteria was the only among the considered microorganisms that caused no loss of cell viability. In fact, the presence of the extract alone, it appeared to induce an increase of the overall metabolic rate.

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